

Amendments to Claims

Claims 1-17 (Canceled).

18. (New) An instrumentation system, comprising:  
    means for asserting an event trigger signal on an event signal path;  
    a set of instruments each coupled to the event signal path and each having a synchronized clock and an event buffer and means for periodically logging a measurement and a corresponding time-stamp obtained from the synchronized clock into the event buffer, each instrument having a mechanism for freezing the periodic logging in response to the event trigger signal.
19. (New) The instrumentation system of claim 18, further comprising means for transferring an event time-stamp associated with the event trigger signal to the instruments via a communication network such that the event-time stamp enables correlation among the measurements contained in the event buffers.
20. (New) The instrumentation system of claim 19, further comprising a timing signal path coupled to each instrument for exchanging timing signals for the synchronized clocks.
21. (New) The instrumentation system of claim 20, wherein the instruments exchange a time-stamp for each timing signal via the communication network.
22. (New) The instrumentation system of claim 21, wherein each instrument includes means for adjusting the corresponding synchronized clock in response to the timing signals on the timing signal path and the time-

stamps carried on the communication network.

23. (New) The instrumentation system of claim 18, wherein the event buffers are circular buffers.

24. (New) The instrumentation system of claim 18, wherein each instrument logs measurements according to a corresponding predetermined sample interval which is derived from the corresponding synchronized clock.

25. (New) An instrument, comprising:  
synchronized clock;  
event buffer;  
means for periodically logging a measurement and a corresponding time-stamp obtained from the synchronized clock into the event buffer;  
means for freezing the periodic logging in response to an event trigger signal.

26. (New) The instrument of claim 25, further comprising means for receiving an event time-stamp associated with the event trigger signal via a communication network such that the event-time stamp enables correlation among the measurements contained in the event buffer.

27. (New) The instrument of claim 25, further comprising means for exchanging a timing signal via a timing signal path for adjusting the synchronized clock.

28. (New) The instrument of claim 27, further comprising means for exchanging a time-stamp for the timing signal via a communication network.

29. (New) The instrument of claim 28, further comprising means for adjusting the synchronized clock in response to

the timing signal on the timing signal path and the time-stamp carried on the communication network.

30. (New) The instrument of claim 25, wherein the event buffers are circular buffers.

31. (New) The instrument of claim 25, further comprising means for deriving a sample interval from the synchronized clock such that the measurements are logged in response to the sample interval.

32. (New) A method for obtaining measurements, comprising the steps of:

    providing each of a set of instruments with a synchronized clock and an event buffer;

    periodically logging a measurement and a corresponding time-stamp obtained from the synchronized clocks into the event buffers;

    asserting an event trigger signal on an event signal path;

    freezing the periodic loggings in response to the event trigger signal.

33. (New) The method of claim 32, further comprising the step of transferring an event time-stamp associated with the event trigger signal to the instruments via a communication network such that the event-time stamp enables correlation among the measurements contained in the event buffers.

34. (New) The method of claim 33, further comprising the step of exchanging timing signals for the synchronized clocks via a timing signal path to the instruments.

35. (New) The method of claim 34, further comprising the

step of exchanging a time-stamp for each timing signal via the communication network.

36. (New) The method of claim 35, further comprising the step of adjusting the synchronized clock in response to the timing signals on the timing signal path and the time-stamps carried on the communication network.

37. (New) The method of claim 32, further comprising the step of deriving a sample interval from the synchronized clock such that the sample interval is used to periodically log the measurements.